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Light-induced periodic structures and their characteristics in crystals CaF2-LuF3, activated by $Ce^{3}+$ and $Yb^{3}+$ ions

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Abstract

© 2016 IEEE.Here we discuss the opportunity of using Ce-doped fluorite-Type crystals as basis for amplitude photonic crystals with modulation of color centers absorption due to complex picture of the dynamic processes occurring in this medium under UV pump. The results of time resolved absorption saturation studies and key parameters of dynamic processes evaluation are presented. Also discuss the results of experiments of creating periodic inhomogeneities of the absorption coefficient of color centers and the gain in mixed crystals with the fluorite structure CaF2-LuF3, doped Ce3+ and Yb3+.

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Keywords

Bragg grating, color centers, fluorite crystals